

Organising robot-assisted surgery: Lessons from Denmark

Theme: Health technology assessments

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1. Background

Robot-assisted surgery is increasingly used as surgical procedure in health care systems. However, there is limited knowledge on clinical, economic and organisational effects of robot-assisted surgery compared to other types of surgery. Consequently, executive directors of health care planning across the five Danish regions initiated a HTA on robot-assisted surgery. A specific request was knowledge on optimal organisation of robot-assisted surgery. Here we present results from the organisational study that formed part of the HTA.

2. Aim

- To investigate the decision processes behind the introduction and spreading of robot-assisted surgery in Danish hospitals
- To explore the association between organisation of robot-assisted surgery and self-assessed performance, i.e. between organisational structures, professional quality and surgical capacity

5. Conclusion and perspectives

- To optimise the effects of robot-assisted surgery strategic planning of introduction and spreading is essential.
- There is potential for organisational improvement at hospital level concerning management and scheduling of robot-assisted surgery.
- Structural organisation in centralised robot centre may be beneficial. However, effective utilisation of robot centre presupposes optimised coordination and control to reduce coordination costs.
- In Denmark, the results have resulted in initiation of a joined strategy among regions on robot-assisted surgery, regarding education, coordination and clarification of use.

3. Methods

Based on a combination of:

- Systematic literature review of international scientific literature on organisation of robot-assisted surgery
- Qualitative case study of robot-assisted surgical teams from seven Danish hospitals, based on:
 - Qualitative interviews with doctors, surgical nurses, anaesthesiologists, hospital managements and representatives from the Danish regions (n = 42)
 - Observations during surgery and at hospital wards

4. Results

In Denmark, there have been limited strategic considerations at the political-administrative level, and considerable variability in the way robot-assisted surgery has been implemented, organised and spread. Decisions on implementation primarily stem from the professional level with an aim to ensure optimal treatment for patients and national and international competitive performance.

It is not evident which structural organisation is the most suitable. However, our results indicate that structural organisation in centralised robot centre may ensure more optimal use of surgical capacity and more dedicated cross-disciplinary surgical teams, compared to organisation in mono-disciplinary wards. However, effective performance in centralised robot centre requires continuous coordination and planning of the daily, surgical programme and focus on recruitment and retention of staff for the surgical team.

Overall, optimal use of robot-assisted surgery presupposes efficient working procedures in the operating theatre and a well-educated and experienced surgical staff.

6. Research group

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